



Express Mail No.: EB 270750085 US

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Michael Wayne Bricker et al.	:	
	:	Art Unit: 2831
Serial No.: 10/659,156	:	
	:	Examiner: Nguyen, Chau N.
Filed: September 10, 2003	:	
	:	
For: CABLE JACKET WITH	:	
INTERNAL SPLINES	:	

**PRE-APPEAL BRIEF REQUEST FOR REVIEW**

Mail Stop: AF  
Commissioner for Patents  
Post Office Box 1450  
Alexandria, Virginia 22313

Applicant requests review of the FINAL Office Action in the above-identified application. No amendments are being filed with this request. This request is being filed with a Notice of Appeal and a one (1) month extension of time.

Review and reversal are requested for the reasons stated on the attached sheets.

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### Remarks

Claims 1-22 remain pending. In a FINAL Office Action dated November 11, 2006, the Examiner rejected claims 1–22 under 35 USC Section 103(a) as being unpatentable over Despard (6,310,295) (hereafter “Despard”) in view of Wentworth (GB 725,624) (hereafter “Wentworth”). Applicant submitted a Request for Reconsideration on January 5, 2007. On February 2, 2007, an Advisory Action was mailed, indicating that the 5 January 2007 request failed to place the application in condition for allowance.

After considering the outstanding rejection, as set forth in the FINAL Office Action and maintained in the Advisory Action, Applicant submits that a prima facie case of obviousness has not been established. For reasons set forth below, Applicant requests that the outstanding rejection be overturned.

As required by the Supreme Court in Graham v. John Deere, 383 U.S. 1, 148 USPQ 459 (1966), when determining obviousness under §103, the following factors must be considered:

- (A) Determining the scope and contents of the prior art;
- (B) Ascertaining the differences between the prior art and the claims in issue;
- (C) Resolving the level of ordinary skill in the pertinent art; and
- (D) Evaluating evidence of secondary considerations. (MPEP §2141(I).

As set forth in MPEP §2141(II), when applying 35 U.S.C. §103, the following tenets of patent law must be adhered to:

- (A) The claimed invention must be considered as a whole;
- (B) The references must be considered as a whole and must suggest the desirability and thus the obviousness of making the combination;
- (C) The references must be viewed without the benefit of impermissible hindsight vision afforded by the claimed invention; and
- (D) Reasonable expectation of success is the standard with which obviousness is determined. Hodosh v. Block Drug Co., 786 F.2d 1136, 1143 n.5, 229 USPQ 182, 187 n.5 (Fed. Cir. 1986).

To establish a prima facie case of obviousness, among other things, (1) there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference

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teachings, and (2) there must be a reasonable expectation of success. In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The mere fact that the references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. In re Mills, 916 F.2d 680, 16 USPQ2d 1430 (Fed. Cir. 1990).

In the present matter, it is submitted that the outstanding Office Action fails to set forth a legitimate motivation for one of ordinary skill to modify Despard's data cable in a manner that would render obvious the claimed invention. The primary reference to Despard would not suffer the disadvantages or problems reasoned in the Office Action to motivate one of ordinary skill to modify Despard based on the teachings of Wentworth.

Claims 1, 10 and 19 concern cables that include a core that comprises one or more twisted pairs of insulated wires. A jacket surrounds the core and the jacket comprises one or more splines projecting inward from the jacket wherein the spline is in contact with the twisted pair(s) to prevent relative movement of the jacket with respect to the twisted pair(s).

In the outstanding Office Action, it is maintained that Despard discloses a cable comprising a core with at least one twisted pair of insulated wires and a jacket surrounding the core. While the Office Action acknowledges that Despard does not suggest adding to the jacket, at least one spline projecting inward from the inner surface of the jacket, the Office Action maintains that Wentworth makes up for this deficiency. In particular, the Office Action maintains that it would have been obvious to modify the jacket of Despard to add Wentworth's ribs projecting inward from the inner surface of Despard's jacket. The Office Action sets forth three reasons that would allegedly motivate one of ordinary skill to provide Wentworth's ribs on the inner surface of Despard's jacket. The three reasons are i) to provide a cable having an improvement in the case of stripping, ii) to provide air channels for cooling around the insulated wires, and iii) to increase the flexibility of the cable.

It is submitted that the reasoning in the Office Action is without merit. Wentworth teaches that the ribs overcome specific problems and disadvantages that were suffered by the prior art. Despard does not suffer from the problems nor disadvantages that Wentworth seeks to overcome. The Wentworth patent application was filed June 23, 1953 and teaches a construction

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for a power cable based on 1953 technology and the state of the art in 1953. In contrast, the Despard patent application was filed December 3, 1999, and teaches a construction for a data cable based on 1999 technology and the state of the art in 1999. As such, the available materials, manufacturing techniques, and performance requirements (both physical and electrical) at the time of Despard's invention are much more refined, developed and advanced, as compared to the available materials, manufacturing techniques, and performance requirements that were available and known in 1953 at the time of Wentworth's invention. Therefore, it does not automatically nor necessarily follow that the power cabling problems, circa 1953, overcome by Wentworth would be experienced by Despard's data cable, built in 1999 or up to the filing date of the present application.

One cannot ignore the fact that forty six (46) years separate the filing dates of Wentworth and Despard. Yet, despite the significant period of time that Wentworth's teachings were readily available and known to the public, no one chose to apply Wentworth's rib construction to a jacket of a twisted pair data cable, before or since Despard's 1999 filing data. If the claimed invention of the present application were obvious, as maintain in the Office Action, why has no one implemented such a cable (prior to applicant's invention)? Similarly, why has no one described the claimed twist pair cable in a printed publication (prior to applicant's patent application)? The answers seem clearly, namely there was no legitimate reason, before applicant's invention, to utilize a jacket with splines to hold in place twisted pair wires.

Beginning with the "stripping" motivation offered in the Office Action to support the combination, namely to provide a cable having an improvement in the case of stripping, the data cable of Despard would not suffer from cracking or tearing during stripping as described in Wentworth. Wentworth describes an insulated electrical wire or cable that has a core that includes a conductor with a covering of plastic that is enclosed within an adjacent layer of the same or similar plastic material. Wentworth explains that the problem within the prior art is that the core insulation is damaged when the outer layer of insulation is removed, for instance when preparing the end of the wire for a joint or termination. Wentworth indicates that the damage to the core insulation occurs due to adhesion of the outer layer of plastic material to the inner layer of plastic material. The adhesion between the inner and outer layers of plastic produces tearing

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and cracking of the inner layer as the outer layer is drawn away (column 1, lines 13-23). Wentworth goes on to indicate that the damage of tearing and cracking is more likely to occur in cold temperatures and when the inner and outer layers of thermoplastic materials are made from PVC or from a copolymer of PVC and polyvinyl acetate. Wentworth addresses this problem within the prior art by forming shallow ribs on the inner surface of the outer layer that project radically inward “so that the touching of the two layers is reduced to substantially line contacts.” Wentworth goes on to explain that the line contact arrangement minimizes the area of contact between the two layers, so that if adhesion between them should occur, the likelihood of damage to the inner layer when stripping away the outer layer is greatly reduced (column 2, lines 77-82).

Despard's data cable would not experience adhesion between the twisted pairs and the cable housing jacket 30 and thus there is no reason, need, nor advantage in adding Wentworth's ribs to Despard's jacket 30. Despard's data cable would not experience adhesion between the twisted pairs 10 and the jacket 30 since the twisted pairs 10, due to their helical geometry, do not have large areas of continuous contact with the jacket 30. In Despard, the twisted pairs 10 only touch the jacket 30 at separate and discrete points, namely in the separate portions of each twisted pair that are exposed and located adjacent to the inner surface of the jacket 30. As the twisted pair 10 propagates along the length of the jacket 30, each twisted pair rotates in a helical manner which, by its very nature, ensures substantial portions of each twisted pair 10 are separated from the inner surface of the jacket 30. Therefore, due to the helical geometry of a twisted pair configuration, Despard's data cable would experience substantially less direct contact between the twisted pair 10 and the jacket 30, as compared to the amount of contact experienced by single strand wires and cables, as discussed in the background section of Wentworth.

Wentworth's teachings are concerned with cables having individual conductors enclosed in plastic to form single strands, where the group of single strands are then enclosed in a directly adjacent layer of the same or similar plastic (column 1, lines 9-13). Wentworth adds the ribs to produce line contacts between the ribs and the insulation on the individual conductors. When the amount of contact, that is created by the line contact geometry of Wentworth, is compared to the amount of contact, that is created by the point contact geometry of the twisted pairs of Despard,

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it is clear that Despard already provides a very segmented contact arrangement between the twisted pairs and the jacket which is even more advantageous than the line contacts created between Wentworth's single conductor and the ribs.

Further, Despard's data cable would not experience adhesion simply because the insulator on the twisted pairs 10 and the jacket 30 are formed from dissimilar materials. The jacket 30 is made of rubber, plastic or polymer. The insulator on the twisted pairs 10 is formed from a polyethylene or fluoropolymer. Polyethylene and fluoropolymer insulators have very different properties and much higher melting points than those of the rubber, plastic or polymer forming the jacket 30. For example, the melting point of a polyethylene or fluoropolymer insulation may be over 700° F, while the melting point of rubber, plastic or PVC may be under 400° F. Because the twisted pairs 10 use insulation formed of a material that is very dissimilar from the materials used to form the jacket 30, no adhesion would be experienced there between. Further, by its very nature, fluoropolymers (e.g., Teflon) used to form the insulation on the twisted pair 10 are extremely resistant to sticking to other materials, and are very tough. Thus, the twisted pairs 10 are covered in a material that is particularly well-suited to avoiding adhesion to the jacket 30 and to avoid tearing.

Further, Despard is intended for a fundamentally different application. Wentworth represents a 1955 patent concerned with forming an electrical wire designed to convey high power. The wire or cable of Wentworth, as a high power carrier, is constructed with certain characteristics tailored and specific to high power applications. In contrast, Despard's cable is not designed, nor intended, for conveying high levels of power, but instead represents a data cable intended to convey data using 1999 technology. Data cables as used in the 1990s and beyond are constructed to provide certain data conveying characteristics (e.g., maintaining low cross talk). Data cables also have different safety requirements as compared to the power cables produced in the 1950s. Data cables in the 1990s and later were constructed with better burn characteristics, such as by providing insulation on individual wires (e.g., Teflon insulation on the twisted pair 10) that has a higher melting point, as compared to the PVC of the jacket 30. In view of the foregoing, it is respectfully submitted that Despard's data cable would not suffer

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from the problem of adhesion and thus one of ordinary skill would not have been motivated to add Wentworth's ribs to address stripping issues.

Next, turning to the "cooling" motivation offered in the Office Action to support the combination, namely to provide a cable having improved cooling during manufacture, the data cable of Despard would not suffer from heating during manufacture as described in Wentworth. The person of ordinary skill would not have been motivated to add Wentworth's ribs to Despard's jacket 30 to provide air cooling channels. Despard's data cable is formed in a manner that does not need additional air cooling during the manufacture. Nor is there any indication that the addition of Wentworth's ribs would increase the amount of air cooling that would be of any use during the manufacturing process of Despard. Wentworth discusses at page 2, column 1, lines 4-6 that the effect of adding the ribs further reduces the risk of adhesion during manufacture by cooling that is provided by the existence of the air channels 13 between the inner and outer layers. However, Despard's cable would not experience such heating during manufacture. As clearly shown in each and every cross section of Despard's data cable, there is significant air space already provided within the jacket 30 surrounding the twisted pairs 10. Adding ribs to the jacket 30 would not introduce additional air space, nor improve the air cooling properties of Despard's data cable. Further, Despard's data cable is manufactured in a very different manner than Wentworth's. The twisted pairs 10 are formed separately from, and before extrusion of, the jacket 30 there over. Also, the melting point of the polyethylene or Teflon fluoropolymer insulation used by Despard is significantly higher than that of the jacket. Therefore, heating would not be an issue during manufacture of Despard's data cable as compared to Wentworth's power cable.

Finally, turning to the "flexibility" reasoning offered in the Office Action to support the combination, namely to provide a cable having improved flexibility, the data cable of Despard would not suffer from rigidity problems as described in Wentworth. There is no indication in Despard, nor Wentworth, that Wentworth's ribs would change the flexibility of Despard's cable. The flexibility of Wentworth's cable is limited because the inner and outer insulation layers are made of PVC or a similarly inflexible material. The flexibility of Wentworth's cable is further limited if adhesion occurs between the inner and outer layers. In contrast, Despard uses

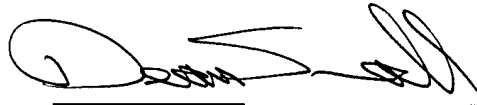
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polyethylene or fluoropolymer insulation on the twisted pairs 10, which is substantially more flexible than PVC and does not adhere to PVC. Thus, there is no suggestion in the prior art that Wentworth's ribs would have any impact upon the flexibility of Despard's cable.

In view of the foregoing, it is respectfully submitted that Despard would not suffer from any problem or disadvantage, that Wentworth suggests to overcome by adding ribs to the jacket. Thus, a prima facie case of obviousness has not been set forth as the suggested motivations for the combination of Despard and Wentworth are not sound and would not have lead the person of ordinary skill to modify Despard's data cable in the suggested manner.

In view of the foregoing, it is respectfully submitted that the pending claims define allowable subject matter and reversal of the outstanding Office Action is respectfully requested.

Respectfully Submitted,



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